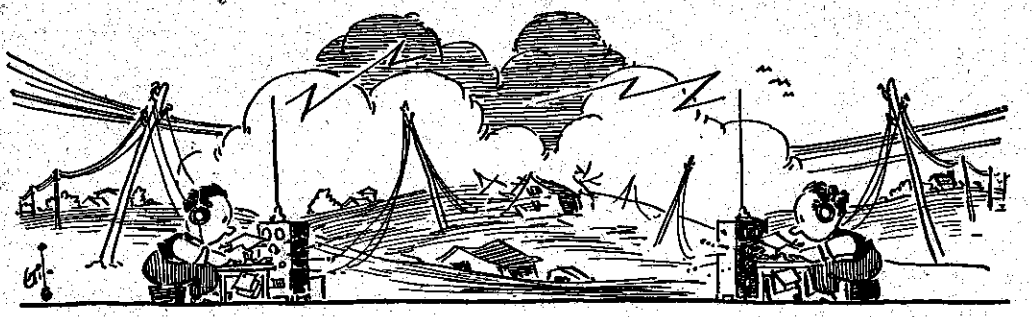
EMERGENCY COMMUNICATIONS

A Manual For Your Emergency Operation

Keep this information in your station

PUBLISHED PRIMARILY FOR THE
A.R.R.L. EMERGENCY CORPS
BY THE AMERICAN RADIO RELAY LEAGUE



THE RADIO AMATEUR best justifies his existence by the service he renders his community in times of disaster and distress when all other media of summoning assistance have failed. The pleasure he derives from the pursuit of his hobby during normal times establishes a debit that he can offset only by his steadfast determination to be prepared and willing to be of service when disaster strikes.

In the event of a communications emergency all amateurs are dedicated to serve in the public interest, within the limitations of their ability, to provide temporary communications for a stricken area until normal facilities are restored.

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Amateur Emergency Communication

When customary communications circuits are interrupted or overloaded a communications emergency is said to exist. If such a condition of interruption or overload is accompanied by general suffering on the part of the inhabitants of the affected region the pressure for the restoration of communications is increased proportionally to the degree of suffering. Under such circumstances the Amateur Service is frequently called upon to carry a portion of the traffic load until such time as normal facilities are restored.

COOPERATION WITH THE AMERICAN NATIONAL RED CROSS

An official "understanding" between the Red Cross and the Amateur Service, in effect for many years, has been reviewed and reaffirmed. This appears in the Disaster Preparedness and Relief Manual (ARC 209) published by the Red Cross. This manual, for the guidance of the Red Cross Chapters, assigns the function of providing and maintaining communication services to a subcommittee on transportation and communication. In preparing to meet the needs for communications incident to a disaster relief operation, the subcommittee is charged with surveying all communications resources within a chapter jurisdiction to obtain cooperation and to plan necessary coördination and mobilization of appropriate facilities in any emergency situation.

Here are pertinent extracts of the ARC 209 information:

Every avenue of communication should be kept open to permit the prompt receipt and dispatch of Red Cross messages. If communications are cut, the subcommittee should establish courier service (by Boy Scouts, motorcycle, etc.), to the nearest communication outlet. Local telephone companies will tag the circuits for authorized Red Cross messages in emergency periods under a cooperative understanding with A. T. & T. The needs of other subcommittees for communications should be determined.

Amateur radio stations and operators, including members of the ARRL, will be contacted to develop a plan for extending priority for emergency communications, and for receiving and transmitting all Red Cross messages, by telephone, telegraph, or radio. Test drills should be held from time to time in coöperation with the Emergency Corps of ARRL. The American Radio Relay League has designated EMERGENCY COÖRDINATORS in many communities to unify the service of amateur radio operators for emergency communications. The Emergency Coördinators or other designated representatives should be asked to assume radio communication responsibilities as part of the subcommittees' plans. Such committee member should designate, and arrange for the services of amateur radio stations and the designation of these facilities, with other radio services, for the American Red Cross.

THE SENDING OF UNAUTHORIZED MESSAGES, ESPECIALLY APPEALS FOR MEDICAL AND NURSING PERSONNEL, SUPPLIES, AND FUNDS SHOULD BE DISCOURAGED. THE SUBCOMMITTEE SHOULD INFORM ALL COMMUNICATION AGENCIES OF THE PERSONS AUTHORIZED TO SEND RED CROSS MESSAGES.

A WRITTEN PLAN FOR "WHEN DISASTER STRIKES" SHOULD BE FORMULATED. PLANS SHOULD BE MADE FOR THE MAINTENANCE OF A MESSAGE CENTER, IN TIME OF DISASTERS, UNDER THE CONTROL OF THE SUBCOMMITTEE, IN COOPERATION WITH COMMUNICATION AGENCIES.

Amateurs may serve many agencies but it is to be noted that ARRL recognizes the Red Cross as the primary disaster relief agency, and is therefore entitled to our best possible arrangements. The Communications Department policy is to create and extend effective emergency radio coverage to every possible community and Red Cross Chapter jurisdiction, where advance preparedness may pay dividends in the form of service. All amateurs are urged to study the section of this manual describing the organization of the ARRL Emergency Corps in order to best fit themselves for this important service.

The A.R.R.L. Emergency Corps

The ARRL Emergency Corps is composed of licensed amateurs who have voluntarily registered their qualifications and equipment for communication duty in the public service when disaster strikes.

Every licensed amateur, whether or not a member of the ARRL, is eligible for membership in the Emergency Corps. The only other qualification is a sincere desire to serve. There are two grades of membership in the Corps: (a) Full Membership, under which the applicant pledges active participation in periodic tests, and (b) Supporting Membership, requiring only limited participation as time permits. The possession of emergency-powered equipment is desirable, but is not a requirement for either grade.

Emergency Corps activities in each ARRL Section are under the direction of the Section Emergency Coördinator, appointed by the Section Communications Manager as his representative in such matters. The amateurs in each community within the Section register their facilities with the local Emergency Coördinator, who, in turn, represents the Amateur Service in its dealings with local civic and relief agencies. The following paragraphs detail the duties and obligations of these officials.

THE SECTION EMERGENCY COORDINATOR

The Section Emergency Coördinator (SEC) is appointed by the SCM to take charge of the promotion of the ARRL Emergency Corps organization throughout the Section. He reports progress and plans to the SCM, and acts as his executive in furthering provisions for emergency amateur radio communications in every community likely to suffer in case of a natural disaster or other emergency. He recommends ECs to the SCM, and determines the jurisdictional areas of ECs as required.

The SEC's functions are:

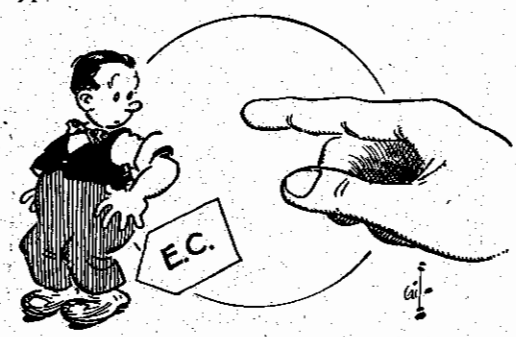
1. The coördination and implementation of a Section program for the promotion of organization for emergency amateur radio work for all Section communities.
2. Policy and planning recommendations to the Section Communications Manager concerning all emergency amateur radio activities.

3. Recommendations for EC appointments and endorsements for community Emergency Coördinators, throughout the Section.
4. The determination of the areas of jurisdiction of the several community Emergency Coordinators.
5. The promulgation of Emergency Corps membership drives, meetings, activities, tests, procedures, etc. at Section levels. (In this the SEC will work through local ECs. ECs sign the local Emergency Corps members' cards; SECs may sign those not in an area normally covered by a local EC, while trying to secure an EC appointee for the area.)
6. The consolidation of the monthly reports obtained from the community Coördinators, and the submission of monthly progress summaries, to his SCM and to ARRL Headquarters, covering Section planning, drills, and the current status of the SEC.
7. The supervision, at Section levels, of community emergency-radio provisions supplied by the Amateur Service.

Inasmuch as his responsibilities require him to act as the Assistant SCM for emergency organization matters pertinent to the Amateur Service, the SEC post is one of top importance. In view of this the Section Emergency Coördinator must be an appointee who will devote his full energy and effort to this one important emergency organizing program for Amateur Radio. The purpose of this post is to provide full time thought and backing for the ARRL Emergency Corps organization.

THE EMERGENCY COORDINATOR

In every community where qualified amateurs can be found the appointment of an Emergency Coördinator will be made by the SCM. For specific agencies a Regional Emergency Coordinator to undertake organization covering a watershed, railway line or other area may be appointed.



DOES YOUR COMMUNITY HAVE ONE?

Coördinators designated for a community should head local amateur committees which they organize and on which each amateur frequency-band-mode group is represented. The duties of the Emergency Coördinator include:

(1) Organizing meetings of all available amateurs and emergency workers.

(2) The designation of assistants for an emergency planning committee.

(3) The calling of committee meetings and the making of appointments to handle particular responsibilities.

(4) The initiation of code class programs for those working for new amateur licenses.

(5) Liaison and general planning for assumed community emergency contingencies.

(6) The establishment of regular drill periods, and simulated emergency tests of equipment and operators.

(7) Monthly assessment of progress and reports for ARRL-QST.

In carrying out the above seven-point program, the EC issues AEC membership cards to each amateur licensee joining in his area, indicating "full" or "supporting" class of membership. His work includes the registration of local emergency equipment and operators to include the locations of stations, equipment, operating frequencies, emergency power sources; the normal availability, experience, telegraph operating speeds, occupation, address, working hours, and the 'phone numbers of operators. He furthers the adoption of a preparedness program for local amateurs designed to promote high operating ability and the building of emergency equipment.

An important phase of his work includes contacting agencies to be served (such as Red Cross, national, state, civic and military authorities, utilities, meterological agency, etc.) — to make available *to them* complete knowledge of the extent of amateur facilities, with the addresses and the telephone availability of himself and his alternate committee members — to determine *from them* their probable traffic load and estimated emergency needs, and the important outside points to or from which they must receive information. Liaison must be maintained with many other services which the Amateur Service must assist, or supplement (such as broadcasting, police, aviation, military, etc.)

In emergency the EC should advise the most effective disposition of operators and stations, to promote efficiency by

(a) Designating main stations for key points,
(b) Manning stations suitable for 16 or 24 hour needs (8 hour shifts recommended), and
(c) Reducing the interference levels by creating planned operator reserves. (Keeping a reserve of operators fresh for needs, asking voluntary coöperation in staying off the air to render maximum service while using a *minimum* number of nets and *stations* and causing minimum interference.)

He utilizes frequencies and modes which are suited to make best use of *all frequencies*, and to minimize interference. The analysis of station frequencies and equipment, from registrations, has an important bearing on these duties. Plans must be predicated on local situations and

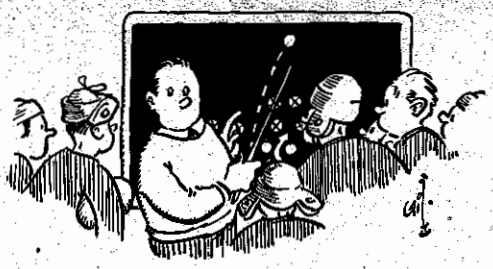
equipment: (a) Local v.h.f. links. (b) Low frequency nets and schedules for point to point work at greater distances. (c) Selecting the most skilled operators for the circuits having heavier loads. (d) Designating telegraph channels for accurate record communications and to properly load telegraph bands, without causing undue radio-telephone band congestion by overloading. (e) Designating telephone channels where speed for discussions is helpful and secrecy provisions, by reason of trained and properly cautioned operators, are believed adequate for a particular service use.

In the performance of his function, coördination and coöperation between different amateur service groups must be arranged and maintained. Friendly rivalry in competitive tests may be encouraged. In actual emergency (and plans for emergency) responsible amateur leaders in any and all groups must put aside petty rivalry in favor of working together closely. Facilities should be pooled for best results while minimizing interference. If the single "best" net cannot be utilized, we suggest careful assignment or division of nets between (a) different agencies served or (b) between certain groups of distant cities or points covered for a specific purpose.

Advance Planning is Necessary

Individual preparedness and organization of amateurs, community by community, are the most essential elements of a successfully-functioning amateur emergency service. Annual ARRL Field Days supply a tremendous incentive to clubs and individuals to perfect and test emergency-powered equipment. Training in message handling and the principles of working together under unusual circumstances combine in this outing an annual "shakedown" of communications gear afield, to challenge individual and group efforts. But unless each individual in addition to working casually in annual events attaches himself to community organization and the support of local plans, our group effort may sometimes fall short of its organized capabilities of performing a public service.

The chief lesson, from past emergencies, calls for support and membership of every active operator in the ARRL Emergency Corps. By joining, one is supporting organized amateur radio for any and every emergency! The AEC member can enjoy and benefit from *advance* discussions, literature, and participation in exercises covering such matters as procedure, priorities, station dispositions, and other factors. By such alignment with AEC, one justifies his license as "in the public interest." Such support contributes to our emergency-readiness. Emergency-readiness contributions to public welfare as well as our self-training and experimenting characteristics permit FCC to grant amateur licenses as of public value. Once in the AEC you are on the "inside" in any amateur-service plans



ADVANCE PLANNING IS NECESSARY!

worked out by your Emergency Coördinator. Your local ARRL Coördinator can provide appropriate blanks for joining the Emergency Corps . . . or write Headquarters.

THREE PHASES OF EMERGENCY PLANNING

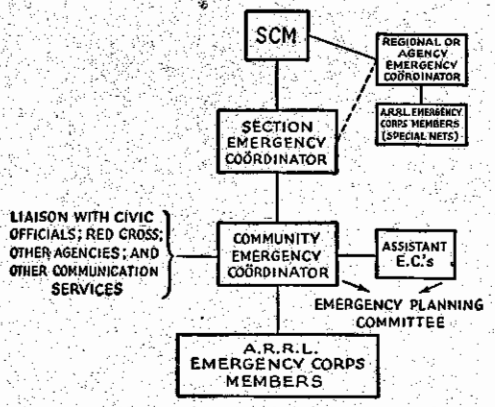
1. There are two types of provisions to be made for emergency radio coverage: (a) that for local short-haul work, (b) that for necessary out-of-the-area or distant coverage. Emergency coördinators have to make plans to cover both cases for implementation, separately or together, depending on the seriousness of the situation.

2. In using radio in the simplest form of emergency work, there is but one objective: to establish contact with an outside point to report difficulties, summon aid, or communicate intelligence of a limited character, when other means fail or are unavailable. *Coverage to some outside point is the thing*!

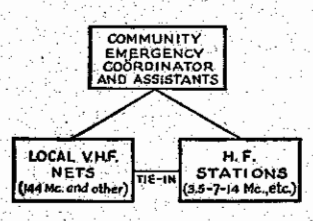
3. When a populated center has its communications crippled by causes that also disrupt transportation, food and water supply, and other organized public services, the *real emergency* is basically the same, but the effects are greatly magnified by the increased requirements. In addition to communicating considerable distances to get help from outside the paralyzed area, there is a problem of maintaining necessary communications between workers *within the area.*

Short-Haul Work — Local Nets

Local emergency networks should be established on a regular basis, wherever facilities permit, or at the very least on a stand-by basis with monthly tests and simulated drills in all the larger cities. Some mobiles and portables usually are assigned to cover points deemed strategically important by city officials for expected emergency use. Ordinarily local nets will use v.h.f. bands. Whether two meters or six meters or ten meters is used will depend on the community and the number of voluntary amateur workers equipped on a common frequency. In very large cities it may be justifiable to have local emergency nets using more than one amateur frequency band, with proper provision for traffic exchanged through common points. It is suggested that all regularly-operating v.h.f. nets dedicate themselves to emergency operation in the event of any public need. The responsible net control stations will be glad to assist the appro-


SCM
REGIONAL OR AGENCY EMERGENCY COÖRDINATOR
ARRL EMERGENCY CORPS MEMBERS (SPECIAL NETS)
SECTION EMERGENCY COÖRDINATOR
LIAISON WITH CIVIC OFFICIALS; RED CROSS; OTHER AGENCIES; AND OTHER COMMUNICATION SERVICES
COMMUNITY EMERGENCY COÖRDINATOR
ASSISTANT E.C.'s
EMERGENCY PLANNING COMMITTEE
A.R.R.L. EMERGENCY CORPS MEMBERS

ORGANIZATION CHART



RADIO FUNCTIONAL DIAGRAM

priate ARRL ECs to permit occasional exceptional tests as well as participation in all major Emergency Corps exercises.

H.F. Stations for Outside Contact

Local stations working on lower amateur frequencies should be included in every community plan, for contact to outside points via ARRL trunk lines, section nets, and other h.f. regional nets. Amateur Service planners should attempt to determine from agencies they expect to serve from what cities or points *outside* the immediate local area supplies, assistance or exchanges of communication would be required in event of possible emergencies. The needs of some agencies may warrant advance designation of a station. Or the setting up of traffic schedules or stand-by c.w. telegraph arrangements between neighboring cities for accurate handling of record communications can be tried on a weekly or other recurrent basis. It is *not* desirable to have too many stations operating on h.f. in haphazard fashion when there is an emergency. In any major catastrophe designated stations should be manned by several shifts of amateurs on a 24-hour basis, to avoid overworking one-man setups. Create the least band congestion and give the best service!

THE ROLE OF AMATEUR COMMUNICATION

Conditions in emergency are such that *every available channel* must be used effectively. Naturally the telephone and telegraph wires are going to be used first when they are available for use. In the interest of suppression of interference, *radio should* not *be used where wire service is available,* except to line up additional avenues for communication to fall back on as a situation worsens. Broadcasting stations are best only for transmitting information to large groups of people. Some amateurs have actually written us to ask how they arrange to connect with the audio channels to the local broadcaster "that they may be ready for emergency." The chance that an amateur station will have to transmit over the local broadcast station, or will have his station used in place of that station in emergency is extremely remote! Amateurs have important emergency functions, *not* in reaching the general public, but in handling necessary point to point communications effectively — as nearly like the service given by the local telegraph office and usual amateur traffic work as possible. The agencies served in past emergencies tell us that they want message handling to be accurate, secret and fast, and the messages reliably recorded in writing whenever practicable. Amateur networks will be depended on to form an invaluable communications system, secondary to wire services whenever they conform to these specifications.

Strive for Efficiency

Whatever happens in emergency, you will find hysteria, and some amateurs who are activated by the thought that they must be "sleepless heroes." So activated, a situation can result that approaches chaos. In some past general emergencies we have had too many stations and operators on the air — too much meaningless communication! Instead of operating almost all the local stations full time or more in emergencies, how much better it would be to man the best located and best equipped stations, suitable for the work in hand, and man these by relief shifts of the best-qualified amateurs. This is the way to reduce interference. This is the way to secure well operated stations, too. Instead of harassed, overworked operators who are inefficient and make mistakes, we need to put our operating on a 6- or 8-hour basis for each operator, and make it possible to keep the key stations on the air two or even three shifts per day (by relief operators) if and when required. Each station ought to have spare personnel to telephone messages, keep logs, prepare traffic for transmission, etc., during intensive operation in emergencies.

Select the Channel to Suit the Need

It is a characteristic of operators, both those using voice, and those using telegraph, that they believe their modes of communication superior. For certain specified purposes and distances one or the other may indeed be preferable. Accuracy, speed, secrecy (avoiding public rumors) are all desirable and important considerations in emergencies. Accurate point to point work with messages receipted properly in two-way handling is preferable to any work patterned after broadcasting in emergencies, to prevent undesired duplication of messages. Duplications cause uncalled for interference and irritate those sending and receiving messages. The consideration of the

number of channels available and the need for efficiency calls for *increased utilization of telegraph* both by reasons of secrecy and minimized interference. C.w. "copy" minimizes garbling. Voice work is speedy for fast local liaison, where accuracy and recorded data are not absolutely needed and secrecy is not required. Many agencies (R. C., W. U., WXSvc.) that we expect to serve explain that secrecy from the public is important, that rumors may not start. For contacting the public, as from time to time is necessary, newspapers and broadcasting are recognized as the preferred media.

WE ARE KNOWN BY OUR CONDUCT

Credit for the Amateur Service depends on teamwork; coördinators will assign a few stations to circuits for agencies that have a volume of traffic or important-enough needs for much consultation with a few scheduled points. To facilitate movement of *any* traffic between focal points in and near the "area", *most* stations of the few that represent a community (let us assume in each band) should work on hourly or half-hourly schedules with nets or individuals covering important points — or points from which wires to all the world are available. In an emergency, nets are molded from the available stations to best fit immediate needs which can only then be visualized.

In the Local Emergency

As many amateurs as possible should be familiar with plans of the Emergency Coördinator and his committee! Local advices from three or four active local stations, and contact with relief operators, as well as the agencies meeting a critical situation, enable a coördinator to multiply the value of the Amateur Service to a community *many* times. By having *early* reports from several amateurs, those most active can be reported as on the job to agencies contacted. Reporters with stations will get any outgoing traffic to the points in their normal communication range. From early reports the first picture of stations and frequencies, and the points scheduled, develops into something tangible for all officials who need amateur radio service.

Tentative plans, based on studies of possible local contingencies, usually require modification to make the most effective disposition of local amateur resources possible to meet this "exact" communications emergency situation. Some stations become unavailable. A first set-up must be modified from hour to hour in serious local emergencies to meet changes in the situation, reach new points, reduce local interference, cover the important circuits with the more skilled and efficient operators. A telephone, messenger contact, every manner of keeping up a local flow of information on station coverage, schedules, needs, etc., helps a coördinator meet the varying needs of a situation, and do credit to the amateur service.

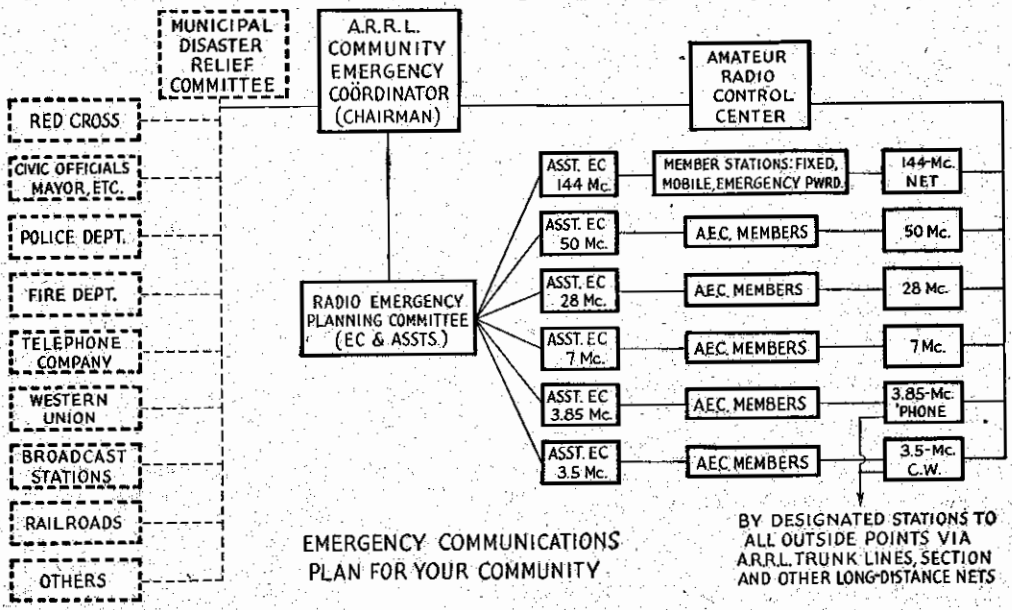
In the Remote Emergency

Absolute silence, for those *not* in the area itself, is most often the very best form of coöperation — *unless and until* one definitely logs an emergency station giving a directive call for his very city.

On a repeated QRRR *that goes unanswered*, remote stations should of course try to establish contact, to relay or assist as seems best after ascertaining the nature of the problem. QRRR is a call for operators *in an emergency situation only*, and operators misusing this call, should be definitely referred to the definition of that call as given in amateur literature.

GENERAL CONSIDERATIONS IN EMERGENCY

It is impossible to state exact rules to cover every possible situation that will arise, but these principles supported by discussion and advice



EMERGENCY COMMUNICATIONS PLAN FOR YOUR COMMUNITY

that will lead amateur operators to use their heads and their receivers to a greater extent than mike or key, should add creditably to future performance of radio amateurs in emergencies.

Use All Channels Intelligently

A hurricane or flood brings conditions like war in some respects. The principle of effective military communication is to use all channels intelligently without fear or favoritism as efficiently as possible. As long as wire circuits function and no overload or disruption occurs, the prudent coördinator will merely martial his forces and set in motion the plan of establishing schedules and nets in such fashion as to be ready to act constructively as need arises. Test messages may be in order. Agencies served may send inquiries or information by radio to check delivery and actual contact. When actual need requires, the communication load may be diverted to radio and delays in establishment of the radio facility will have been avoided.

There are always more amateurs outside an isolated area where communications by radio are desperately desired than there will be *in* such an area. Interference from outside stations is one of the main handicaps of the fellow in the emergency area who has self-power and low power — but if this fellow uses judgement and places himself in the center of a telegraph band or ties in with his ARRL Section or State net on its frequency he often has no interference at all.

QRRR

QRRR is the "official ARRL land SOS." It is a distress call for emergency use only, to be used only by a station definitely asking assistance!

Operators *outside* emergency zones, deprived of power in major floods and other disasters, have in the past failed to appreciate adequately the problem of battery- and low-powered stations trying to clear traffic and establish contact to "outside" points. It is *all wrong* for operators having picked up an inquiry message addressed to a point in a devastated area to work themselves up to the point of sending "CQ flood area" or sometimes even "QRRR." *Listening* and coöperating by keeping quiet are practically always best for "outside stations" until they are called for. It is *also a service* for amateurs to forward inquiry traffic, during the secondary phases of an emergency after all-important first messages have been sent and answers delivered, but the practice of *solicitation* of public traffic of the inquiry type through broadcasting stations or otherwise is rather to be discouraged. All questions of priority and procedure should be decided by evaluation of each particular matter in the light of the degree of public interest involved.

Keep the QRM Level Down

The operator working under emergency conditions should establish reliable contacts with stations as near to him as possible or at points logical for the handling of his traffic. Amateurs in localities remote from any emergency should be asked to *stand-by*; to QRX without calls or interruptions until it is seen they can assist *better* than anyone else. DO NOT make an excuse for getting into a situation which someone else is really better fitted to handle, by reason of either his location or his signal. As a rule it is *not* necessary for stations many hundreds of miles distant to make extended efforts for each emergency occasion, since the very nature of most such traffic makes it better to handle it as a 50-to-250 mile proposition. If these distant stations will merely be silent until called upon, and defer their discussion about a rumored emergency until afterward, substituting a "learning by listening" attitude, the actual situation may be much more constructively handled. Interference levels can be kept much lower. One or two stations guarding each emergency station frequency to pipe down unthinking newcomers (who start to interfere) by asking their coöoperation will usually be quite sufficient to cover each telephone station or c.w. station actually engaged with emergency traffic.

The problem of reducing interference levels so the important communications in the area concerned can go through, is one that most of all requires the enlistment, and registration and cooperation of every licensee. The glory seeker who itches to be at his mike and key, is like the novelty seeker who intercepts police calls and tries to be in at the arrest, or who congests the streets and increases public losses by trying to beat the fire engines to the fire! Practice in operating behavior, procedure — and in the knack of properly framing messages, is needed. Actual practice "on the air" and over telephone circuits in transcribing *messages*, is heartily recommended. Taking part in the ARRL Field Day and in net traffic operating is excellent for experience.

No Authority to Repeat Bulletins. Policing.

Policing and observer stations recommended by ARRL or appointed by FCC in communications emergencies may report any failure to observe the FCC's emergency orders or rules for disciplinary action. Addressed transmissions to amateurs (bulletins) should include their source. They should be repeated exactly, if at all, and *may not be repeated* without specific authority for so doing. Rumors are started by expansion, or contraction, and subsequent repetition of broadcast dispatches. To delete qualifying words, expand, exaggerate, or alter meanings is criminal.

Authentication and Routing

The *signed* message is the best identification for the person who receives a message. We recommend that amateurs link emergency stations direct to civil and military authorities, so that all messages derive from reliable sources. Broadcasters and others are often criticized for

Never transmit rumors during emergency.

transmitting hearsay and rumors, even for sending traffic requiring delivery "broadcast" and the like. The more nearly our amateur service can make results conform to the pattern of commercial *communications* and *not* to the field of broadcasting, the higher are our achievements acclaimed by agencies served in emergencies!

Starting an Emergency Net

The selection of suitable stations to be invited to work together is important. Operating ability is required. All individuals must be willing to contribute unselfishly to the success of the group objectives, permitting operations to be guided absolutely by the word of the Net Control Station (NCS). A common frequency is helpful. The intended net frequency should be reported to the ARRL Communications Department in order that Headquarters will be able to advise whether such frequency conflicts with other nets which have previously been registered. A time of operation that suits that of the majority of operators, and avoids the time of operation of QRMing stations or other nets in nearby territory should be selected. An organizer should not organize nets of stations haphazardly merely because a group of congenial fellows at any old place happen to work on the same frequency. That sort of net might offer temporary entertainment but would not be likely to be generally useful or fulfill maximum possible good for amateur radio or the community at large. Get a map (from the nearest gasoline station?) and set yourself an objective — then try to get stations in the cities and towns important to the coverage that is the organizational goal. Public service will be served and at the same time you get to know a group of operators that can become the very salt of the earth to each other. There will develop a justified pride in a smoothly working communications system, which is the joint property and cherished possession of *each member* of the group — a system beyond what any *one* member could create of his individual effort. Establishment of high morale and responsibility for the joint effort is the secret of circuit discipline, and SUCCESS.

A progressive net grows, obtaining new members both as a result of inquiries by non-members and through the efforts of net members. Bulletins may be issued at intervals to keep in direct contact with the members regarding general net business, to keep tab on net procedure and make suggestions for improvement, to keep track of active members and to weed out inactive ones. A net manager should obtain and circulate as much information as possible to members to aid them.

HANDLING THIRD-PARTY TRAFFIC

It is a common belief among non-traffic-handling amateurs that the Amateur Service is permitted, in normal times, to handle only unimportant "non-commercial" messages, and that

"ADDRESS TRAFFIC CORRECTLY"

the important, and sometimes so-called "commercial", traffic handled during time of emergency is permitted to be handled by special dispensation of the Federal Communications Commission. Nothing could be farther from the truth than this. Amateurs may handle *any* domestic traffic, whether "pertaining to commerce" or not, at any time, provided only that they receive no compensation, direct or indirect, for such handling. Therefore it will be seen that the handling of third-party traffic by amateurs during period of communications emergency is a normal extension of the third-party traffic handling carried on by amateurs from day-to-day. It is for this reason that the handling of third-party traffic, in quantity, on a daily basis if possible, provides the best possible training to those who wish to prepare themselves to be of public service should disaster strike.

NET CONTROL STATION

The successful operation of a net depends a lot on the NCS. This station should be chosen carefully and be one that will not hesitate to enforce each and every net rule and set the example in its own operation. A form for daily use by the NCS may be helpful, one to be checked for participation when each station reports in each day during the month. Each month one of these sheets mailed to the Net Manager with squares checked makes a permanent record of who reported in at all times.

Duty as NCS is generally assigned to the station of the senior member of the net, but may be assigned to any station in the net which can best fulfill the duties. Route Manager or Phone Activities Manager may run the responsible post well or delegate the job to men with aptitude. As operators become experienced they should have an opportunity to serve as ACTING NET CONTROL to familiarize each member with the duties and enable *any one of them* to act in that capacity *in case of necessity*.

If an NCS or Alternate should not take control within three minutes of the time set for be-

TO ASSURE ACCURACY WHEN USING VOICE

Word lists are available to prevent errors that occur due to phonetic similarities that occur in speech. Voice operated stations should use a *standard* list as needed to identify call signals or unfamiliar expressions. ARRL Official Phone Stations have adopted the following word list

A — ADAM	N — NANCY
B — BAKER	O — OTTO
C — CHARLIE	P — PETER
D — DAVID	Q — QUEEN
E — EDWARD	R — ROBERT
F — FRANK	S — SUSAN
G — GEORGE	T — THOMAS
H — HENRY	U — UNION
I — IDA	V — VICTOR
J — JOHN	W — WILLIAM
K — KING	X — X-RAY
L — LEWIS	Y — YOUNG
M — MARY	Z — ZEBRA

ginning of drill, *any station present* should take charge and begin regular net operation. As soon as the NCS or Alternate enters the net, the Acting NCS should make a report of the stations in the net and other pertinent information, after which he may turn over control to the authorized station if so requested.

The NCS is charged with the clearing of traffic within the net, with the dispatching of internet traffic, and with maintaining order within the net. Questions concerning traffic are referred to the NCS for decision. The authority of the NCS extends only to the operation of the net on the air, and is in no way concerned with the interior administration of the station, nor with its operation. *Within its scope, however, the authority of the NCS is absolute, its decisions are final and its instructions are strictly COMPLIED WITH.*

'Phone Net Considerations

It is more difficult to maintain discipline in a 'phone net. There is more inclination to rag-chew due to the inherent nature of the contacts. The time for rag chewing is after the network exchanges are over. If the network is to be favorably known it should show the proper restraint in this regard and its performance should exhibit snap and precision.

PAMs have organized nets with periods for technical forums or exchanges, but practically always for any real communications demonstrations, or training, or for emergency utility for any agency, the fellows have come back to "traffic" as the real stuff of which communications is made.

FACTORS FOR SUCCESS

Each member of any net should start his share of traffic. Any messages taken for friends cannot of course be guaranteed as to speed or accuracy, but it is surprising, the fine things that can be accomplished through proper operating and relaying. Accuracy is possible . . . it depends on training ourselves to send and to copy.

Be Brief

A theme of brevity in operating should be carried out in the entire set-up. A net operating without any superfluous words in its operations will be automatically a much snappier and better all around net. Hams in general seem to have a hard time realizing this! Every single word not absolutely needed, (even a "tu") may be dispensed with profitably. Each useful net member should maintain at least one sked (daily or nearly so) *in addition to his net contacts* in order that the net can have sufficient traffic sources and outlets. Do your part. Don't let one or two of the stations handle all the traffic!

SUCCESS OR FAILURE OF ACTUAL NET OPERATIONS DEPENDS ON KEEPING NET ORDER AND OPERATING SWIFTLY AND SMOOTHLY BY EXERCISING THE POWERS VESTED IN THE NCS FOR THIS PURPOSE. NCS may break into net at any time if in his opinion it is necessary to aid the functioning of the net and may request any station to QRX in order to eliminate rag chewing, unauthorized transmissions, superfluous transmissions, to handle urgent or emergency traffic or situations, to eliminate QRM from outside stations to direct traffic, or for any other reason necessary. NCS should keep an accounting during each Net period of what stations report in and what traffic they have. A slogan during operations, BE BRIEF.

MESSAGE FORM

Each message originated and handled should contain the following component parts in the order given:

(a) Number
(b) Station of Origin
(c) Check
(d) Place of Origin
(e) Time Filed
(f) Date
(g) Address
(h) Text
(i) Signature

(a) Every message transmitted should bear a "Number" beginning at Nr. 1. Keep a sheet with a consecutive list of numbers handy; file all messages without numbers; and when you send the messages, assign numbers to them from the "number sheet," scratching off all the numbers on that list as you do so, making a notation on the number of the station to which the message was sent and the date. Such a system is convenient for reference to the number of messages originated each month.

(b) The "Station of Origin" refers to the call of the station at which the message was filed and this should always be included so that a "service" message may be sent back to the originating station if something interferes with the prompt handling or delivery of a message.

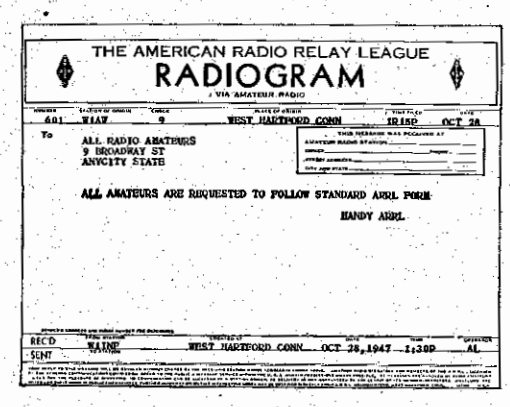
(c) Every word and numeral in the text of a message counts in the "Check." Full information on checking messages is given in the 1948 ARRL Handbook.

(d) The "Place of Origin" refers to the name of the city from which the message was started. If a message is filed at League Headquarters in West Hartford, Conn., the preamble reads "Nr 457 W1AW ck 21 West Hartford Conn 8R57p June 11, etc."

If a message is sent to your radio station by mail the preamble shows the place of origin as the town where the message came from. If a message was filed at ARRL Headquarters and if it came by mail from Wiscasset, Maine, the preamble would run like this to avoid confusion: "Hr msg 457 W1AW ck 21 Wiscasset Maine via West Hartford Conn 8R57 p June 11, etc."

(e) The "Time Filed" is the time at which the message for transmission is received at the office of transmission to be sent.

(f) Every message shall bear a "Date" and this date is transmitted by each station handling the message. The date is the "day filed" at the originating station unless otherwise specified by the sender.


THE AMERICAN RADIO RELAY LEAGUE

RADIOGRAM

VIA AMATEUR RADIO

401 W1AW 9 WEST HARTFORD CONN 10 18P OCT 28

To ALL RADIO AMATEURS
9 BROADWAY ST
ANYCITY STATE

ALL AMATEURS ARE REQUESTED TO FOLLOW STANDARD ARRL FORM

HANDY ARRL

RECD MAINE WEST HARTFORD CONN OCT 28,1947 1:30P AL

SENT

(g) The "Address" refers to the name, street and number, city, state, and telephone number of the party to whom the message is being sent. A very complete address should always be given to insure delivery. When accepting messages this point should be stressed. In transmitting the message the address is followed by a double dash or break sign (- . . . -) and it always precedes the text.

(h) The "Text" consists of the words in the body of the message. No abbreviations should ever be substituted for the words in the text of the message. The text follows the address and is set off from the signature by another break (- . . . -).

(i) The "Signature" is usually the name of the person sending the message. When no signature is given it is customary to include the words "no sig" at the end of the message to avoid confusion and misunderstanding. When there is a signature, it follows the break; the abbreviation "sig" is not transmitted.

FIXED TEXT MESSAGES—"ARL" CHECK

In the secondary or personal-inquiry phase of communications emergencies the use of numbered-text messages is recommended.

The following list of texts was prepared with possible emergency needs and utility in mind. It is a special tool for special occasions. It should be used *only* when stations at each end of a QSO are equipped with lists so that every message delivered or relayed to a station not having a list can be expanded. The device saves a great deal of repeat-transmission time and is, therefore, useful when a large volume of inquiries to be handled can just as well conform to the "numbered-text" plan.

In using the following list the amateur starting the message sends the *number* corresponding to that particular text instead of the text itself. The letters ARL (short for American Radio Relay League numbered-text-to-follow) must be placed before the figures of the check to show that the text is from this particular numbered text list. ARL identifies a communication as a message that has to be expanded for delivery or relaying to a station without such a list. In radio handling, the number designating the text always should be spelled out, for accuracy.

ONE	All safe. Do not be concerned about disaster reports.
TWO	Coming home as soon as possible.
THREE	Am perfectly all right. Don't worry.
FOUR	Everyone safe here. Only slight property damage.
FIVE	All well here. Love to folks.
SIX	Everyone safe, writing soon.
*SEVEN	Reply by amateur radio.
EIGHT	All safe, writing soon, love.
NINE	Come home at once.
TEN	Will be home as soon as conditions permit.
ELEVEN	Cannot get home. Am perfectly all right. Will be home as soon as conditions permit.
*TWELVE	Are you safe? Anxious to hear from you.
*THIRTEEN	Is.....safe? Anxious to hear.
*FOURTEEN	Anxious to know if everything is OK. Please advise.
*FIFTEEN	Advise at once if you need help.
*SIXTEEN	Please advise your condition.
*SEVENTEEN	Kindly get in touch with us.
*EIGHTEEN	Please contact me as soon as possible at..... .

*Not to be solicited in emergency.

Operators must be alert and careful to insure accurate, useful radio service by whatever method. Sent by itself ARL? means "Do you have the list of ARRL numbered radiograms and you are ready for such a message?" ARL (reply) gives an affirmative answer to both questions.

Example: NR 1 W1AW CK ARL 1 NEWINGTON, CONNECTICUT MARCH 2 (address) BT THREE BT JOHN AR.

OUR DUTIES ARE:

Primarily, the handling of strictly *emergency* traffic, that is, agency traffic between the scene of a disaster and a source of relief;

Secondarily, the prompt and efficient handling of third-party personal inquiry traffic which flows between a disaster area and all parts of the country.

Equipment Considerations

It is not to be expected that every amateur will prepare himself for an emergency by having available a complete and separate self-powered station, although a large number of individuals and club groups do so. There is, however, no reason why every amateur cannot prepare his station for an emergency by having an emergency power supply ready and a quick means for utilizing all or part of his regular station equipment as an emergency-powered station. The emergency power supply can be anything from a small vibrator supply and/or batteries to a large gasoline-driven generator. It is the purpose of this section to present data on available types of self-powered supplies and to show how regular station equipment can be prepared for emergency applications.

If it is considered desirable to build separate portable emergency equipment, the small receivers and transmitters described in the ARRL Handbook are recommended.

CHOICE OF POWER SUPPLY

There is a comparatively wide variety of self-generating power sources from which to choose. An analysis of the numerous available types should disclose which is the most suitable in the light of specific requirements, based on the criteria of utility, efficiency, performance and cost.

Dry Batteries

Dry-cell batteries are the standard primary electrical energy source. They are ideal for receiver and low-power transmitter supplies because they provide steady, pure direct current with almost zero regulation. Their disadvantages are weight, high cost, and limited current capability. In addition, they will lose their power even when not in use if allowed to stand for periods of a year or more. This makes them uneconomical if not used more or less continuously.

The secret of long battery life at normal current drains lies in intermittent operation. The duration of "on" periods should be reduced to a minimum. The more frequent the rests given a dry-cell battery, the longer it will last. As an example, one standard type will last 50% longer if it is operated for intervals of one minute with five minutes' rest in 24-hour intermittent operation than if it is operated continuously for four hours per day, although the actual wattage consumption in the 24-hour period is the same.

Storage Batteries

The most universally acceptable self-contained power source is the storage battery. It has high initial capacity and can be recharged, so that its effective life is practically indefinite. It can be used to provide filament or heater power directly, and plate power through associated devices such as vibrator-transformers, dynamotors and genemotors, and a.c. converters. For emergency work a storage battery is a particularly successful power source since practically no matter what the circumstances such batteries are available. In a serious emergency it would be possible to obtain 6-volt storage batteries as long as there were automobiles to borrow them from and, for this reason, the 6-volt storage battery makes an excellent unit around which to design the low-powered portable-emergency station.

Vibrator-Transformers

The vibrator-transformer consists of a specially-designed transformer combined with a vibrating interrupter. When the unit is connected to a storage battery the circuit is made and broken rapidly by the vibrator contacts and the pulsating d.c. which flows in the primary of the transformer causes an alternating voltage to be developed in the secondary. This high-voltage a.c. is in turn rectified, either by a vacuum-tube rectifier or by an additional synchronized pair of vibrator contacts, and filtered, providing outputs as high as 400 volts at 200 ma. Tube rectifiers are ordinarily used only when the negative side of the circuit cannot be grounded, a requirement with the self-rectifying type. The high-voltage filter circuit is usually identical with that of an equivalent power source operating from the a.c. line. Noise suppression equipment, serving to minimize r.f. disturbances, is usually incorporated in the manufactured unit.

Dynamotors and Genemotors

A dynamotor is a double-armature high-voltage generator, the additional winding operating as a driving motor. It is usually operated from a 6-, 12-or 32-volt battery, and may deliver voltages from 300 to 1000 or more. Dynamotors have been widely used in military work and many of those in amateur use derive from such origins.

The genemotor is a refinement of the dynamotor designed especially for automobile receiver, sound truck and similar applications. It has found wide acceptance among amateurs as a source of transmitting power, having good regulation and efficiency combined with economy of operation. It is also used in connection with portable receiver installations, although a rather high inherent noise level limits this application in sensitive amateur high-frequency receivers.

Successful operation of dynamotors and genemotors implies heavy, direct leads, mechanical isolation to reduce vibration, and thorough r.f. and ripple filtration (the purchase of manufactured filter units is recommended.) The shafts and bearings should be thoroughly "run in" before regular operation is attempted, and the tension of the bearings should be checked occasionally.

D.C.-A.C. Converters

In some cases it may be desirable to utilize existing equipment built for 115-volt a.c. operation in portable applications. To operate such equipment with any of the power sources outlined in the foregoing would require a considerable amount of rebuilding. This can be obviated by using a rotary converter capable of changing the d.c. from 6-, 12- or 32-volt batteries or 110 d.c. lines to 110-volt 60-cycle a.c. Such converter units are available from several manufacturers,

 There is a place for you in the Emergency Corps. Write your SCM for application blanks.

with output rating from 40 to 300 watts. Their cost runs from fifteen to fifty dollars at amateur prices.

The conversion efficiency of these units averages about 50%. In appearance and operation they are similar to genemotors of equivalent ratings, while the prices are approximately the same. The overall efficiency of the converter system will be lower because of the losses in the a.c. rectifier-filter circuits and the necessity for converting heater as well as plate power.

Generators

The plate supply systems outlined in the foregoing are, with the exception of the dry-cell batteries, designed to utilize the electrical energy stored in a storage battery. The problem then arises of securing the energy to be stored in the battery. If access to a.c.-operated chargers is not possible at times between actual use, some form of self-powered charging system is essential.

This need is ordinarily best met by a gasoline- or wind-driven generator. Water-power generators have been used, but their dependence on special circumstances is obvious, and they are not available in small sizes.

The windcharger consists of a small generator driven by a suitable impeller, mounted to take advantage of the free energy offered by the wind. The standard type costing in the neighborhood of twenty dollars will supply up to 16 amperes to a 6-volt battery. It will ordinarily keep fully charged a battery used to power a typical receiver and small transmitter operated from vibrator or genemotor supply in intermittent operation.

Gasoline-driven generators are also available for use in charging 6-volt or larger batteries. These ordinarily are rated at 150 or 200 watts and cost in the neighborhood of forty dollars. A ½- or ¾-h.p. single-cylinder four-cycle engine is used, which will operate for twelve or fifteen hours on a gallon of gasoline.

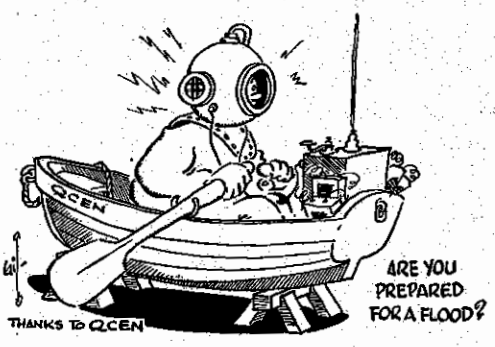
In higher-powered installations the use of intermediate storage batteries may be dispensed with, and a gasoline-driven generator supplying 110-volt a.c. directly may be employed. Such generators are ordinarily rated at a minimum of 250 or 300 watts, and cost fifty or sixty dollars. They are available up to two kilowatts, or big enough to handle the highest-power amateur rig, at a cost of between three and four hundred dollars. Most are arranged to charge automatically an auxiliary 6- or 12-volt battery used in starting. Fitted with a self-starter and adequate mufflers and filters, they represent a high order of performance and efficiency.

A variant on the generator ides is the use of the fan-belt drive. The disadvantage of requiring that the automobile must be running throughout the operation period has not led to general popularity of this idea amongst amateurs, although in San Francisco and Oakland an amateur emergency unit relies on it heavily. Such generators are similar in construction and capacity to the small gas-driven units.

The home construction of generators of all the preceding types has been successfully attempted by amateurs at times, although the possession of a considerable knowledge of electric motor design is essential. One especially useful possibility is the re-winding of old automobile charging generators, several hundred watts capacity being obtainable from the largest sizes. Those originally used on the old 4-cylinder Dodge cars have been successfully adapted by amateurs. Trade schools will often have their students rewind these generators for only the cost of the material, a possibility worth investigating.

War Surplus Units

A large proportion of the surplus dynamotors and vibrator supplies which were obtained by amateurs after the end of World War II may be used for emergency work with little or no alteration. In fact these units have provided many groups with their first portable/emergency equipment.



THE EMERGENCY RECEIVER

The weakest link in the portable or emergency communications chain usually is the receiver. An inadequate receiver, with poor selectivity, low sensitivity and insufficient stability, can ruin a QSO even under favorable conditions. When it is remembered that conditions in portable or emergency operation are often more severe than those at home, with poor antenna facilities, high noise levels, severe interference, etc., the fallacy of attempting to use an inferior portable receiver is apparent.

The best procedure of all is to use the home station receiver for portable work. Headphones should be used and the output tube removed, but this is no hardship. Headphones are far more satisfactory in such applications than the speaker in any event. This procedure not only ensures the availability of the high-performance receiver so vitally necessary, but the practice that has been obtained by using the receiver at home is invaluable in the specialized operating techniques of portable or emergency work. It takes as much experience to learn to run a receiver properly as it does to drive a car, and the middle of a crisis is no time to gain that experience. Even on lowered plate voltage the home superhet will be better than a makeshift.

If a special portable/emergency receiver is to

be built, it should be a superheterodyne. With present-day tubes and components, it is possible to build a simple superheterodyne as cheaply as a t.r.f. receiver, and there is no comparison between the two in performance. The average communications superheterodyne can be operated with storage battery heater supply and dry-cell or vibrator-pack "B" supply. With the audio power tubes removed from the receiver, the power requirements are not too great. Some of the receivers on the amateur market have provision at the rear of the set for plugging-in a d.c. supply, and those that don't can be easily modified by drilling a socket hole at the rear of the receiver and wiring it into the set. When regular a.c. operation is used, a shorting plug in the socket completes the circuit. A little study of the wiring diagram of the receiver will show how it can be adapted to battery or other self-powered operation.

THE EMERGENCY TRANSMITTER

Owing to the difficulty in securing power for emergency, portable and rural transmitters, their design will depend almost entirely upon the power supply available. Considering possible defects in hastily-improvised radiation systems, etc., it seems unwise to use less than 10 watts input to a power amplifier or 15 watts to an oscillator. However, powers greater than two or three times these values are not usually necessary, so selection of the power supply will depend almost entirely upon the pocketbook and other resources. The 300-volt, 100-ma. vibrator-transformer and genemotors represent a nice compromise unless it is possible to step into the 200- or 300-watt gasoline-driven generator class.

Perhaps the best plan in providing for an emergency and portable transmitter is to utilize the basic exciter unit in the regular station. This not only ensures the availability of a reliable, efficient unit at all times but means a saving in parts and equipment. It represents no hardship to the permanent station to construct the exciter so it is compact, readily removable, and, above all, solidly and dependably assembled. If your present exciter is not adaptable to this use, plan the new one so it will be. Of course, provision for 6-volt tubes throughout is essential, with the heater circuit so arranged that it can be connected to a storage battery without change. A suitable plate supply using a vibrator or genemotor or similar system should be available separately, arranged for ready connection. The best method is to have a socket and plug connector assembly, with one plug built into the transmitter and another, wired identically, connected permanently to the emergency supply.

ANTENNA SYSTEMS

It is difficult to specify standard antenna systems for emergency or portable applications, because in all cases the location is the determining factor. As with most things, the simplest antenna is ordinarily the best.

One of the simplest systems is the end-fed antenna. A single half-wave on the lowest frequency to be used will radiate plenty of energy, providing a good part of its length is well above ground. If it is cut reasonably close to resonance efficient coupling is assured by connecting directly to the plate (through a variable condenser) or directly to a supplementary link-coupled tuned circuit.

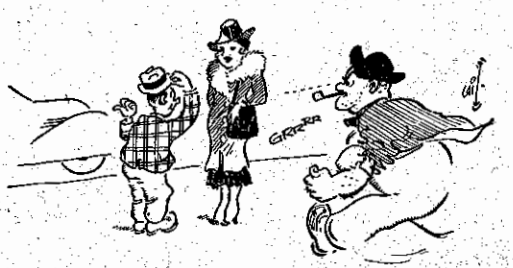
If a transmission line is essential, it should be as well-constructed as possible. The single-wire-fed type is ideal if the feed line can be brought off the antenna at right angles. The feeder should be tapped on the plate coil (through a 0.002-u.f.d. fixed condenser) at the point where the desired loading occurs, making sure that the tank circuit is tuned to resonance. The tables shown in the ARRL Handbook for this type of antenna should be followed closely.

A low-impedance two-wire line is excellent if the antenna is to be an integral part of the portable station, since if it is too long it can be coiled-up out of the way. Rubber-covered lamp cord will make a fair feed line, the slight mismatch accounting for only a small loss of power. For the meticulous, one of the special 75-ohm lines can be used. A "folded doublet", fabricated entirely of 300-ohm "Twin Lead", provides an excellent one-band antenna.

The familiar tuned transmission line, of either the Zepp or center-fed types, is next in preference. It is dependable in performance but somewhat more complicated to erect. The antenna coupling system should be extremely flexible with this type, with tapped coils and choice of series and parallel connections to accomodate any feeder length. The feeders should be kept short and direct.

Emergency antennas may be erected with insulation of dry hard wood, glass towel bars, porcelain ware, etc., with wire salvaged from broken communications (not power!) lines or similar sources. If it is impossible to erect resonant lengths of wire, impedance-matching systems such as shown in the Handbook can be used. Tuning can be accomplished by plate milliammeter, neon bulb, or a flashlight bulb in series with the antenna.

Probably the most straightforward preparation for different conditions is to include several lengths of rope with the portable antenna, so that a line may be thrown into a tree or dropped out of a window. Portable masts can be built but involve rather serious construction difficulties.



SOME DISASTERS ARE PREDICTABLE

FCC Emergency Regulations

All amateurs, insofar as possible, should be familiar with every word of all FCC regulations applicable to amateurs. The numbered sections of the regulations particularly pertinent to emergencies (see § 12.156) should be religiously observed.

Band Segments for Calling Only

When FCC "declares" an emergency, the 25-kc. segments on the designated band-edges are reserved by FCC for *emergency calling*. Band segments such as the following are then *for emergency calling* only: 3500-3525 kc., 3975-4000 kc.

First Five Minute Listening Periods Required Hourly

Every amateur operator using the designated frequency bands for handling relief and emergency traffic must stop and observe the five-minute hourly quiet period (0000-0005) . . . the only exception to that rule, *following a declaration of public emergency by the FCC*, is that a message of utmost priority being handled by an amateur in an emergency zone may be continued, ignoring this quiet-period requirement.

Emergency Communications Bands

Since 25-kc. band-edge segments are specified in the regulations as pertinent to any declaration of a general public-service emergency, the remaining band segments are those that must be used for the purpose of handling all emergency traffic. Such bands are: 3525-3850 kc., 3850-3975 kc.

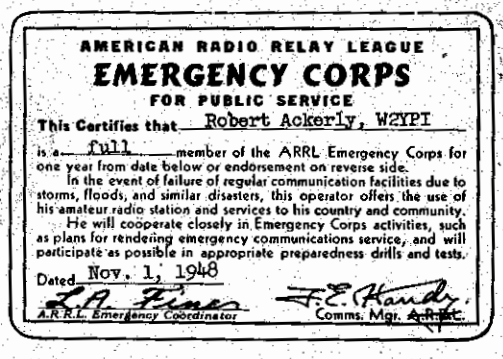
All Casual Operation Prohibited

The text of the FCC emergency-applicable regulations is quoted specifically below. Note the directness and implication of the language! *Casual* conversation, *incidental* calling, testing, *or working, unrelated to the emergency* "shall be prohibited," Remarks *not* pertinent to constructive handling of the communications emergency situation are thus prohibited. The FCC in designating assisting amateur stations (§152.54d) says that these "will report stations failing to comply with any part of the emergency rules."

While there are limitations on the authority of the observer-policing stations, and since they act when possible in an advisory capacity, there is the expressed intention of the Commission to examine fully the reports of the designated operators, taking any necessary disciplinary action after investigation of examples of noncompliance with the Commission's regulations.

F.C.C. REQUIREMENTS SUMMARIZED

The text of the current FCC regulations follows, these having complete force and effect from the time the FCC has "declared" a communications emergency until the Commission declares the emergency ended.



AMERICAN RADIO RELAY LEAGUE

EMERGENCY CORPS

FOR PUBLIC SERVICE

This Certifies that Robert Ackerly, W2YPT

is a full member of the ARRL Emergency Corps for one year from date below or endorsement on reverse side.

In the event of failure of regular communication facilities due to storms, floods, and similar disasters, this operator offers the use of his amateur radio station and services to his country and community.

He will cooperate closely in Emergency Corps activities, such as plans for rendering emergency communications service, and will participate as possible in appropriate preparedness drills and tests.

Dated Nov. 1, 1948

A.R.R.L. Emergency Coordinator — Comms. Mgr. A.R.R.L.

EMERGENCY CORPS MEMBERSHIP CARD
Have You Got Yours?

Excerpts of §12.156. *Operations in emergencies.*

In the event of widespread emergency conditions affecting domestic communication facilities, the Commission may confer with representatives of the amateur service and others, and if deemed advisable, declare that a state of general communications emergency exists, designating the area or areas concerned (normally not exceeding 1,000 miles from the center of the affected area), whereupon it shall be incumbent upon each amateur station in such area or areas to observe . . . restrictions for the duration of such emergency: (a) States that transmissions, other than those relating to relief work or other emergency service such as amateur networks can provide shall not be made within designated sub-bands. Incidental calling, testing and working, including casual conversations and remarks not pertinent or necessary to constructive handling of the emergency situation, shall be prohibited.

(b) Frequencies (designated channels) shall be reserved for emergency calling channels, for initial calls from isolated stations of first calls concerning very important emergency relief matters. . . . All stations having occasion to use such channels shall change as quickly as possible to other frequencies for communication.

(c) A five minute listening period for the first five minutes of each hour (during which no traffic of less than the highest priority can be handled) is designated by this section. No replies to calls or resumption of routine traffic shall be made in the five minute (first five minutes of each hour) listening period.

(d) FCC may designate certain amateur stations to assist in promulgating the emergency announcement, to police the bands of frequencies designated and to warn noncomplying stations observed to be operating therein. These stations shall report fully to the Commission on any noncompliance, after notice with the pertinent provision. Policing-observer stations shall not enter into discussions with other stations beyond the furnishing of essential facts relative to the emergency.

(e) The special conditions imposed under this section will cease to apply when the Commission terminates the emergency declaration.

TERMINATION OF EMERGENCY DECLARATIONS

The termination of an FCC emergency order should not normally be anticipated at the exact time of restoration of wire facilities. Just as the FCC indicates that it will consult with those primarily interested in making a declaration of public emergency, FCC will similarly examine the conditions "in the public interest" before it terminates any emergency order. At such time as the amateur service and representatives of wire and radio services can indicate to the FCC that communications facilities have been supplemented or restored *so that all communications filed can be handled on a current basis*, the FCC may be expected to issue an order terminating any emergency declaration.

Before Emergency

PREPARE yourself by providing a transmitter-receiver setup together with an emergency power source upon which you can depend.

TEST both the dependability of your emergency equipment and your own operating ability in the annual ARRL Field Day and the several other on-the-air contests which take place annually.

REGISTER your facilities and your availability with your local ARRL Emergency Coördinator. If your community has no EC, contact your local civic and relief agencies and explain to them what the Amateur Service offers the community in time of disaster.

In Emergency

LISTEN before you transmit. Never violate this principle.

REPORT at once to your Emergency Coördinator so that he will have up-to-the-minute data on the facilities available to him. Work with local civic and relief agencies as the EC suggests, offer these agencies your services directly in the absence of an EC.

RESTRICT all on-the-air work in accordance with FCC regulations, Sec. 12.156, as soon as FCC has "declared" a state of communications emergency.

QRRR is the official ARRL "land SOS", a distress call for emergency only. It is for use *only* by a station seeking assistance.

RESPECT the fact that the success of the amateur effort in emergency depends largely on circuit discipline. The key station *in the emergency zone* should be the supreme authority for priority and traffic routing.

COOPERATE with those we serve. Be ready to help, but stay off the air unless there is a specific job to be done that you can handle more efficiently than any other station.

COPY all bulletins from W1AW. During time of emergency special bulletins will keep you posted on the latest developments.

After Emergency

REPORT to ARRL headquarters as soon as possible and as fully as possible so that the Amateur Service can receive full credit. Amateur Radio has won glowing public tribute in over 75 major disasters since 1919. Maintain this record.